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NEW SPECIES OF FUNGI FROM VARIOUS LOCALITIES

BY J. B. ELLIS AND B. M. EVERHART.

* HYMENOMYCETES.

Agaricus (*Tricholoma*) *subrufescens* E. & E.

Pileus carnose, convex-plane, 4-5 cm. across, light colored with a reddish tinge, center darker, innate-fibrillose-squamose, not at all viscose, flesh white and quite thin towards the margin. Lamellæ unequal, rounded behind, very light flesh color, with a reddish tinge, especially where bruised or broken, moderately crowded, 2-3 mm. wide, substance rather thick. Tasteless, but with a strong farinose smell like that of a freshly cut cucumber. Stem of fibrous texture, softer within and becoming hollow, about 8 cm. high and 1 cm. thick below, subattenuated above, surface somewhat squamulose, about the same color as the pileus, the whole plant assuming a distinctly reddish tinge, more decided with age. Spores white, sub-globose, about $3\frac{1}{2}\mu$. diameter.

In low, mixed woods, among decaying leaves, Newfield, N. J., Sept. to Oct.

Hygrophorus squamulosus E. & E., in Ellis & Everhart's North Am. Fungi, 2d series, No. 1912.

Carnose throughout and brittle. Pileus hemispherical, expanding to convex, 3-4 cm. across, bright orange-red, becoming paler especially around the margin, tomentose-squamulose, more distinctly so in the disk, never viscose. Lamellæ emarginate-adnate, with a slight decurrent tooth, light yellow, unequal, rather broad, moderately crowded, margins obtuse, at length pulverulent, interspaces only slightly rugose. Stem about 5 cm. long, $\frac{1}{2}$ - $\frac{3}{4}$ cm. thick, subattenuated above and slightly farinose at the summit, hollow, light orange with a deeper tint midway, often compressed and curved. Spores white, oblong-elliptical, $5-6 \times 3-3\frac{1}{2}\mu$. Basidia clavate-cylindrical, $22-25 \times 3\frac{1}{2}-4\mu$, stipitate.

Near *H. coccineus* Schaeff. but the pileus is orange red, not scarlet and only convex, not conical or ever viscose.

In low, swampy woods, amongst moss and decaying wood and leaves. Newfield, N. J., July to October.

Marasmius concinnus E. & E.

On dead limb of *Euonymus atropurpureus*, Mt. Cuba, Del., Sept. 1893. (Commons, No. 2306).

Minute, about 2 mm. high. Pileus convex, smoky-brown, 1 mm. broad, pruinose. Lamellæ not crowded, adnate, pruinose, edges obtuse. Stipe white, arising from a patch of white appressed tomentum, pilose-strigose below, attenuated and pruinose-pubescent above. Spores white, globose, 3μ , diam. Basidia cylindrical, $12-15 \times 4\mu$.

Pistillaria bartolomæi E. & E.

On dead stems of *Callirrhoe involucrata*, Rockport, Ks., June 17, 1893. (Bartholomew, No. 319).

Gregarious, dull flesh color, short, about 1 mm. high, sub-cylindrical or compressed, obtusely pointed at the apex, slightly darker below but mostly not narrowed into a stipe. Basidia cylindrical, $10-12 \times 2-2\frac{1}{2}\mu$. Spores globose $2-3\mu$ diam.

This is an anomalous species, standing ambiguously between *Pistillaria* and *Clavaria*, its crowded and dwarfish growth reminding one of same resupinate *Hydnum*, or it might at first sight be taken for a *Cyphella*.

“Appears in hot, wet weather, about the middle of June and destroys many of the best plants, root and branch.”

Asterostroma bicolor E. & E.

On rotten wood, Wilmington, Del., Oct. 1893. (Commons, No. 2356).

Effused, immarginate, thin, hymenium dirty white, substratum ferruginous; stellate hyphæ, deep brown, mostly with 3-4 stout ($60-100 \times 4-5\mu$ at base), radiating spines. Spores globose, hyaline, $5-7\mu$ diam.

Differs from *A. albido carneum* (Schw.) in its ferruginous substratum, coarser stellate hyphæ and globose spores. It spreads over the rotten wood for some distance, interrupted here and there by the inequalities of the surface.

* * PYRENOMYCETES.

Dimerosporium Galactis E. & E.

On living leaves of *Galax aphylla*, Marion, Va., June, 1882. Com. Smith Ely Jelliffe, M. D.

Mycelium hypophyllous, superficial, sparingly branched, radiate, with sessile, globose hyphopodia as in *Asterina Leemingii*, forming orbicular spots 2-3 mm. diameter or more or less confluent. Perithecia seated on the mycelium, ovate, 65-80 μ diam., pierced above, black. Asci oblong, obtuse, aparaphysate, abruptly short-stipitate, 30-40 x 7-8 μ , 8-spored. Sporidia biserial, oblong, 1-septate and slightly constricted at the septum, each cell nucleate, yellowish-hyaline, 10-12 x 3-3 $\frac{1}{2}$ μ . Some of the perithecia contain oblong, hyaline, 2 nucleate stylospores 6-7 x 3 μ .

This occurs on the same leaves as *Asterina Leemingii* E. & E., but is distinct in its ovate, smaller perithecia and smaller sporidia. This last named species was described as having the perithecia depressed-globose, but they are really only convex or scutellate, and of radiate-cellular structure.

***Hypocrea tenerrima* E. & E.**

Spreading over mosses, decaying sticks, &c., Nuttallburg, West Va., July, 1893. (L. W. Nuttall, No. 123).

Perithecia gregarious, minute ($\frac{1}{8}$ mm.), clothed (except the black apex) with a thin white tomentum, seated on a thin snow-white, tomentose-arachnoid subiculum. Asci cylindrical, 40 x 3 μ , without paraphyses, 8-spored. Sporidia uniserial, oblong, obtuse, hyaline, 5-6 x 2 μ , with a single nucleus in the center, (becoming uniseptate)?

This is closely allied to *H. subcarnea* E. and E., but differs in the color of the subiculum, the black apex of the perithecia, the narrower asci and rather longer sporidia.

***Hypocrea Virginiensis* E. and E.**

On partly dead leaves of *Rhododendron maximum*, Nuttallburg, West Va., August, 1893. (L. W. Nuttall).

Epiphyllous, stromata carnose, scattered, sub-hemispherical or depressed-turbinate, 1-2 mm. diam., of a yellowish gray color, subtruncate above and obscurely margined (when mature). Perithecia buried in the stroma, ovate, membranaceous, 110-150 μ diam. Ostiola hemispherical, prominent, black, broadly perforated and sometimes collapsed. Asci clavate-cylindrical, p. sp. 40-45 x 7-8 μ , short-stipitate, filiform-paraphysate, 8-spored. Sporidia biserial, oblong-fusoid, yellowish-hyaline, uniseptate, slightly constricted at the septum, obtusely pointed at the ends, 10-12 x 3-3 $\frac{1}{2}$ μ .

H. viridens B. and C. seems to differ in its hidden ostiola (ostiolis latitantibus).

Nectria bicolor E. and E.

On dead twigs of *Carya*, Wilmington, Del., Sept. 1893. (Commons, No. 2245).

Gregarious, perithecia ovate, slightly contracted at base, reddish-flesh-color, 250-300 μ diam., clothed, except a small space around the conic-papilliform, darker colored ostiolum, with clavate, 1-2 septate hairs hyaline and 3-4 μ thick at base, yellow and granular-roughened, and 5-7 μ thick at the rounded, obtuse, oblique apex. Asci clavate-cylindrical, p. sp. 35-40 x 6-7 μ , pseudo paraphysate, 8-spored, short stipitate. Sporidia biseriate, oblong, straight, hyaline, subobtuse, 7-11 x 2 $\frac{1}{2}$ -3 $\frac{1}{2}$ μ , 2-3 nucleate, continuous at first, finally faintly uniseptate and slightly constricted.

The yellow color of the hairy coat is the same as in *N. sulphurea* Ell. and Calk, but there is no subiculum, and in that species the perithecia are not hairy, but simply pruinose. *Fusarium episphaerium* C. and E. (Grev. V. p. 50) appears to be the conidial stage.

Lasiosphaeria striata E. and E.

On dead willow limbs near Park Hill, Ont., Canada, May, 1893. (Dearness, No. 2177).

Perithecia gregarious, subglobose, $\frac{3}{4}$ -1 mm. diam., fibrose-membranaceous, pale reddish-brown, thin and collapsed above, fibrose-striate, seated on a thin, dark colored, crustaceo-tomentose subiculum extending along and blackening the limb for several centimeters. Asci clavate-cylindrical. short-stipitate, 100-110 x 7-8 μ , 8-spored with filiform paraphyses. Sporidia crowded-biseriate, fusoid, hyaline, acute, 3-5 septate, 40-60 x 2 $\frac{1}{2}$ -3 μ .

The young perithecia are filled with stylospores 20-27 x 3 μ , 3 septate, hyaline.

Acanthostigma parasiticum E. & E.

Parasitic on *Diatrype stigma*, Newfield, N. J., November, 1892.

Perithecia scattered, ovate, superficial, small (100-112 μ high), clothed with stout, straight, rigid, spreading bristles 50-75 x 5 μ ; ostiolum papilliform. Asci oblong, 55-70 x 12-15 μ , slightly overtopped by the abundant paraphyses. Sporidia fasciculate, fusoid, multi-(6-12) septate, slightly curved, thickened above, yellowish-

hyaline, $40-70 \times 4-5\mu$, (mostly $40-50\mu$ long), 6-8-septate.

A. pygmaeum Sacc. and *A. Clintonii* Pk., have sporidia of equal thickness throughout and in the latter, straight, but the three are closely allied.

Rosellinia Hystrix E. & E.

On old hickory nuts, lying on the ground, Newfield, N. J. May, 1893.

Perithecia gregarious, ovate, obtuse, $110-120\mu$ wide, $130-150\mu$ high, rather thickly clothed all over with short ($8-12\mu$), black bristles. Asci (p. sp.) cylindrical, $35-40 \times 6-7\mu$, short-stipitate, overtopped by the abundant, filiform paraphyses. Sporidia uniseriate, short-elliptical, pale olivaceous, slightly compressed, $5-6\mu$ long, about $2\frac{1}{2}\mu$ thick and $3\frac{1}{2}\mu$ broad.

Differs from the other bristly species in its smaller compressed sporidia.

Ceratostoma corticolum E. & E.

On the inside of cast-off bark of *Ailanthus* decaying on the ground, Newfield, N. J., March 21, 1893.

Perithecia gregarious, globose about $\frac{1}{4}$ mm. diam. or less, membranaceous, black and rough, at first buried in the bark, with only the point of the cylindrical ostium erumpent, at length more or less distinctly superficial by the weathering away of the bark. Ostium about as long as the diam. of the perithecium, smooth and black at the apex, straight. Asci cylindrical, p. sp. about $75 \times 7-8\mu$, paraphysate?. Sporidia uniseriate, elliptical, continuous, brown, $12-14 \times 6-7\mu$.

Differs from *C. brevirostre* (Fr.), in its rough perithecia and rather smaller sporidia, and from *C. Therryanum*, in its much smaller perithecia.

Ceratostomella microspora E. & E.

On a rotten beech log, Alcove, N. Y. Sept., 1893. (C. L. Shear, No. 174.)

Perithecia buried in the wood, finally suberumpent, scattered, minute (150μ diam.) ovate-globose, membranaceous, contracted above into a cylindrical ostium $200-300\mu$ long, the apex erumpent and slightly projecting. Asci clavate, paraphysate, $16 \times 3\mu$. Sporidia collected in the swollen apex of the ascus, allantoid, hyaline,

moderately curved, minute, about $3 \times \frac{1}{2} - \frac{3}{4} \mu$. The asci resemble those of *Calosphaeria*.

Distinct from any of the described species in its minute perithecia and minute allantoid sporidia.

Melanopsamma borealis E. & E.

On bark, Newfoundland, May, 1893. (Rev. A. C. Waghorne).

Perithecia gregarious, superficial globose or depressed-globose, rugose-roughened, black, $400-500 \mu$ diam. Ostium papilliform, the apex of the perithecium around it irregularly cleft and torn so as to resemble the blossom end of an apple. Asci clavate-cylindrical, short-stipitate, $75-80 \times 7-8 \mu$, paraphysate, 8-spored. Sporidia clavate-oblong, hyaline, uniseptate and constricted at the septum, $14-16 \times 5-6 \mu$, much resembling the sporidia of *Glonium lineare* (Fr.).

Melanopsamma nucigena E. & E.

On old hickory nuts lying on the ground, Newfield, N. J. May, 1893.

Perithecia gregarious, brown, superficial, ovate, $200-250 \mu$ high, about 150μ broad tubercular-roughened, clothed at first with a short, brown pubescence and scattering, short, pale hairs; ostium papilliform, soon perforated. Asci clavate-cylindrical, $60-70 \times 7 \mu$, short-stipitate, paraphysate, 8-spored. Sporidia biseriata, fusoid, slightly curved, 3-septate, not constricted, $15-20 \times 3\frac{1}{2}-4\frac{1}{2} \mu$, yellowish-hyaline.

Differs from *M. abscondita* E. and E. in its narrower, rather shorter sporidia, not at all constricted, and its ovate or ovate-conical perithecia and from *Trematosphaeria nuclearia* De Not. in its 3-septate sporidia.

Melanomma deciduum E. & E.

On black ash R. R. ties and on wood of cedar rails, Potsdam, New York, March, 1860.

Perithecia superficial, scattered, globose, black, collapsing when dry, with short, brown, scattering hairs, especially below, $300-400 \mu$ diam., with a minute, papilliform ostium. Asci cylindrical, short-stipitate, $60-70 \times 6 \mu$, paraphysate, 8-spored. Sporidia biseriata, fusoid, 3-septate, constricted at the middle, septum pale brown, $15-18 \times 3 \mu$, ends acute.

Differs from *M. inispissum* (Schw), in its larger perithecia and

more scattered mode of growth and its longer, narrower, fusoid, (not ovate-oblong) sporidia.

Teichospora nucis E. & E.

On old hickory nuts lying on the ground, Newfield, New Jersey. May, 1893.

Perithecia scattered or loosely gregarious, superficial or erumpent superficial, black, small, conic-hemispherical, 125–150 μ broad, 100–110 μ high, with a papilliform ostiolum, finally collapsing above. Asci oblong-cylindrical, 70–75 x 12–15 μ , abruptly contracted at base with a very short, nodular stipe. Paraphyses filiform. Sporidia obliquely uniseriate, or subbiseriate, elliptical, yellow (becoming brown or even opaque), about 5-septate, with a longitudinal septum more or less perfect, sometimes constricted in the middle, 14–18 x 8–9 μ .

Comes near *T. Emilii* Fabre, but perithecia much smaller and not sprinkled with any white powder.

Didymosphæria vagans E. & E.

On dead limbs of *Ostrya*, *Carya*, and *Ulmus*, London, Canada. May, 1893. (Dearness Nos. 2110, 2113, 2113 B.)

Perithecia densely gregarious, small, $\frac{1}{4}$ – $\frac{1}{3}$ mm. diam., white inside, covered by the epidermis which is raised into pustules and blackened directly over them and finally pierced by the papilliform ostiolum. Asci clavate, paraphysate, 8-spored, gradually narrowed toward the base, 100–110 x 12 μ . Sporidia uniseriate, elliptical, brown, uniseptate, scarcely constricted, 15–20 x 9–11 μ .

Differs from *D. epidermidis* (Fr.), in its larger sporidia and perithecia white inside and from *D. nitidula* Sacc., in its smaller perithecia and sporidia.

Sphærella phragmitis E. & E.

On dead leaves of *Phragmites communis*, Pine, Indiana. Sept., 1893. (Prof. R. A. Harper).

Perithecia scattered, globose, 100–110 μ diam., pierced above, buried in the parenchyma of the leaf, but visible by translucence. Asci oblong-cylindrical, short-stipitate, 30–45 x 7–9 μ , aparaphysate, 8-spored. Sporidia biseriate, clavate-piriform, 1-septate and scarcely constricted, sometimes slightly curved, hyaline, 9–12 x 3–4 μ . Differs from *S. lineolata* (Rob. and Desm.), which also occurs on *Phragmites*,

in its scattered perithecia and smaller sporidia. On the culm and lower part of the leaves is a *Stagonospora* (*S. Phragmitis* E. and E.), which appears to be the stylosporous stage of the *Sphaerella*. The sporules are oblong-elliptical, 2-3-nucleate, yellowish-hyaline, very abundant, $10-12 \times 3-4\mu$, in perithecia about the same as the ascigerous perithecia.

***Sphaerella Chimaphilæ* E. & E.**

On living leaves of *Chimaphila umbellata*, Faulkland, Del. May, 1887. (Commons, No. 479).

Spots amphigenous, 2-3 mm. diam., concave above, orbicular, with a slightly raised border, dark with a lighter center and mostly surrounded by a dark colored area of greater or less extent. Perithecia amphigenous, seated on the spots and on the blackened area around them, innate with the apex erumpent, $75-100\mu$ diam. Asci cylindrical-oblong, subsessile, $40-45 \times 6-7\mu$. Sporidia subbiserial, oblong-fusoid, uniseptate, hyaline, not constricted, $7-8 \times 2-2\frac{1}{2}\mu$. The larger spots are indistinctly zonate.

Allied to *S. Vaccinii* Cke. but in that there are no definite spots and the sporidia, as shown by an examination of authentic specc., are longer ($12-15 \times 1\frac{1}{2}-2\mu$) or (Sec. Cke.) $12-18 \times 1\frac{1}{2}-2\mu$.

***Physalospora Ambrosiæ* E. & E.**

On living leaves of *Ambrosia trifida*, Racine, Wis. Sept. 1893. (Davis, No. 9317).

Spots irregularly elliptical or sub-orbicular, $\frac{1}{2}-1\frac{1}{4}$ cm. diam., rusty brown, surrounded by a light yellow aureole. Perithecia ovate, about 200μ diam., the perforated apex strongly projecting above and the rounded base equally prominent below. Asci clavate-cylindrical, $60-70 \times 10-12\mu$, subsessile, paraphysate, 8-spored. Sporidia uniseriate below, subbiserial above, oblong-elliptical, hyaline, continuous, 2-nucleate, $10-12 \times 6-7\mu$.

***Leptosphaeria muricata* E. & E.**

On leaves of *Andropogon muricatus*, St. Martinville, La. (Langlois).

Perithecia scattered, lying in the channels between the nerves of the leaf and covered by the epidermis, with the apex and papilliform ostium slightly projecting, subelliptical, $150-250\mu$ in the longer diam. Asci slender, sub-cylindrical, $65-70 \times 5-6\mu$, paraphysate,

8-spored, short-stipitate. Sporidia overlapping-uniseriate, short-fusoid, yellowish, 2-septate, scarcely constricted, $10-11 \times 2\frac{1}{2}-5\mu$, mostly not over $2\frac{1}{2}\mu$, ends acute.

Differs from *L. Michotii* West, in its elliptical perithecia, slender asci and shorter, fusoid paler sporidia.

Ophiobolus Andropogonis E. & E.

On dead leaves of *Andropogon muricatus*, Louisiana. (Langlois).

Perithecia scattered, subcuticular, elliptical, $220-250\mu$ in the longer diameter, the apex and papilliform ostiolum slightly prominent. Asci clavate-cylindrical, $60-80 \times 8-10\mu$, short-stipitate, with abundant paraphyses. Sporidia linear, yellowish, multiseptate, mostly straight, $40-80 \times 2-2\frac{1}{2}\mu$.

In the North Am. Pyrenomycetes this was included in *O. Medusae* E. and E., but it is distinct on account of its much shorter asci and sporidia, as well as its smaller, elliptical, glabrous, more distinctly prominent perithecia. The habit, however, is the same.

Diaporthe (Chorostate) Dircae E. & E.

On dead and nearly decayed limbs of *Dirca palustris*, London, Canada. July, 1892. (Dearness, No. 2992).

Perithecia in subcircinate groups of 12-20, buried in the surface of the wood, depressed-globose, $\frac{1}{3}-\frac{1}{2}$ mm. diam., whitish inside, with ostiola convergent and erumpent in a little fascicle, joined together below, their short-cylindrical, $\frac{1}{2}$ mm. long apices free and slightly projecting through the ruptured epidermis. Asci clavate-cylindrical, $50-60 \times 6-7\mu$, paraphysate. Sporidia biseriate, oblong-fusoid, straight, 4-nucleate, hyaline, $11-13 \times 2\frac{1}{2}-3\mu$.

There is no black circumscribing line around each separate group of perithecia, but a continuous black line or stratum running along for some inches in extent, in the wood beneath the perithecia.

Diaporthe (Chorostate) Juglandis E. & E.

On dead limbs of *Juglans cinerea*, Alcove, N. Y. Aug. 1893. (C. L. Shear, No. 145).

Perithecia buried in the unchanged substance of the inner bark without any circumscribing line, circinate, 6-12 together, globose, $400-600\mu$ diam., with slender necks converging and rising through the bark, terminating in a dense fascicle of short-cylindrical or hemispherical, broadly perforated ostiola, erumpent in a small, convex,

black disk which is soon obliterated, and surrounded by the ruptured, pustuliform-raised epidermis. Asci cylindrical short-stipitate, p. sp. 90–100 x 8–10 μ , 8-spored, (paraphysate)? Sporidia uniseriate or sometimes partly biseriate, subacutely elliptical, hyaline, uniseptate and constricted at the septum, each cell with a single nucleus, 15–20 x 7–8 μ . *Melanconium oblongum* Berk., occurred on the same limbs.

This differs from *D. bicincta* C. and P., in its more obscure stroma and larger perithecia, asci and sporidia.

Diaporthe (Chorostate) Sambuci E. & E.

On dead stems of *Sambucus Canadensis*, Ann Arbor, Mich., April, 1893. (L. N. Johnson, No. 483).

Stroma cortical, consisting of the scarcely altered substance of the bark, orbicular, convex, about 2 mm. diam., not circumscribed either in the wood or bark. Perithecia 10–15, buried in the bark in a subcircinate cluster, not at all sunk in the wood, 250–350 μ diam., white inside, ovate-globose, their short necks converging and terminating in a compact fascicle of stout, erect, cylindrical ostiola rounded and subobtuse at the apex, perforating the epidermis and rising slightly above it. Asci clavate-fusoid, 40–50 x 7 μ with obscure paraphyses. Sporidia biseriate, oblong-fusoid, 4-nucleate and with a short, oblique hyaline appendage at each end at first, finally constricted so as easily to separate in the middle, straight or slightly curved, hyaline, 14–16 x 3–3½ μ .

The other species on *Sambucus* have the perithecia scattered or gregarious and the sporidia not appendiculate.

Diaporthe (Euporthe) micromegala E. & E.

On dead herbaceous stems, (*Desmodium*)? Wilmington. Del. July, 1893. (Commons, No. 2309).

Gregarious, sometimes 2 or 3 perithecia lying close together, ¼–½ mm. diam., covered by the epidermis and only slightly sunk in the substance of the stem. Ostiola filiform, bent or curved, about 1 mm. long, very slender. Asci broad-fusoid, p. sp. 50 x 20 μ . Sporidia conglobate, cylindric-fusoid, nucleate, subobtuse, not constricted, nearly straight, 25–28 x 5–6 μ .

D. magnispora E. and E., N. A. Pyr. p. 430 and *D. megalospora* E. and E., id. p. 446, both have larger sporidia, but besides the different habitats, the former has clustered perithecia and the latter

has longer, coarser ostiola and longer, narrower asci, with constricted sporidia.

***Pseudovalsa ulmicola* E. & E.**

On dead elm limbs, London, Canada. May, 1893. (J. Dearness, 1430c).

Stroma orbicular or elliptical, $\frac{1}{2}$ -1 cm. diam., or by confluence becoming irregular and much larger, formed of the whitened substance of the bark and surrounded (in a horizontal section) by a black line. Perithecia ovate-globose, $\frac{1}{2}$ - $\frac{3}{4}$ mm. diam., entirely buried in the bark and penetrating nearly or quite to the wood, 8-20, subcircinately arranged, their necks converging and the hemispherical, perforated ostiola erumpent in a minute fascicle perforating the epidermis, but scarcely rising above it. Sporidia allantoid, yellow-brown, 20-28x5-7 μ , 1-3-septate, ends obtuse and often swollen.

The specc. were rather old and the asci dissolved.

***Hypoxyton discoideum* E. & E.**

On bark of dead stems of the climbing var. of *Rhus Toxicodendron*, Newfield, N. J. Dec. 1892.

Stromata gregarious, subseriate, erumpent-superficial, black (when mature), 2-3 mm. diam., at first hemispherical, then with the thin margin slightly raised from the bark so as to become subdiscoid, with quite a resemblance (outwardly) to *Hypocrea Schweintzii* Fr. Ostiola papilliform, at length often umbilicately collapsing. Sporidia oblong, straight or slightly curved, pale brown, 2-nucleate, 8-11 (mostly 8-10) x 3-3 $\frac{1}{2}$ μ . The specc. were old and the asci had disappeared.

***Tryblidium Ohense* E. & E.**

On rotten wood, Ohio. (Morgan.)

Perithecia gregarious, oblong or oblong-elliptical, 1-1 $\frac{1}{2}$ x $\frac{1}{2}$ - $\frac{3}{4}$ mm. straight or slightly curved, black, roughish, with 1-2 deep longitudinal striæ on each side of the loosely closed lips, ends sub-acute or obtuse. Asci cylindrical, subsessile, densely paraphysate, 75-80 x 8-10 μ , 8-spored. Sporidia uniseriate, oblong-elliptical, uniseptate, hyaline at first, becoming brown, 12-15 x 4-5 μ .

This would come under *Mytilidion*, but the perithecia are flattened above and the lips separated by a deep cleft.

Tryblidiella pygmæa E. & E.

On weather-beaten wood, Ohio. (Morgan).

Perithecia gregarious, semi-immersed, acutely elliptical, black, not striate, $\frac{1}{2}$ - $\frac{3}{4}$ mm. long, lips incurved, not closed, exposing the dark colored disk. Asci clavate, $60-75 \times 12-15\mu$, subsessile, with filiform, branched paraphyses. Sporidia biseriate, clavate, 3-4-septate, $20 \times 6-7\mu$, hyaline becoming brown.

Has the same habit as *Glonium lineare*.

* * * **DISCOMYCETES.****Lachnellula microspora** E. & E.

On bark of spruce trees, New Harbor, Newfoundland. May, 1893. (Rev. A. C. Wagborne).

Sessile or very short-stipitate, 2-3 mm. across, cup shaped, (nearly closed at first), margin fringed and outside clothed with a dense coat of rufo-cinereous $70-80 \times 3\frac{1}{2}\mu$, stout, rough, simple or regularly branched, subfasciculate hairs. Disk pale orange when fresh, subrufous when dry. Asci clavate-cylindrical, subsessile, $55-60 \times 6-7\mu$, paraphysate, 8-spored. Sporidia uniseriate, globose, hyaline, smooth, about $3\frac{1}{2}\mu$ diam.

Has the general appearance of *Lachnella corticalis* (Pers.)

Cyathicula quisquiliaris E. & E.

On decaying leaves, petioles, &c., lying on the ground in woods, Nuttallburg, West Va. May, 1893. (L. W. Nuttall).

Gregarious, sessile, $1-1\frac{1}{2}$ mm. diam., cup-shaped, disk pale, with a tinge of brick color when dry, dull, dirty white and furfuraceous-squamulose outside, margin distinctly cleft-toothed and incurved when dry. Asci cylindrical, subsessile, $55-65 \times 6-7\mu$, with filiform paraphyses scarcely thickened above. Sporidia uniseriate, or subbiseriate above, elliptical, hyaline, continuous, $6-8 \times 3-4\mu$.

Dermatea simillima E. & E.

On bark of *Acer rubrum*, cut for firewood, last winter. Newfield, N. J. Oct. 1893.

Cespitose or subseriate, but sometimes standing singly. Ascomata short stipitate, yellowish-olive, disk concave, becoming nearly plane, with a thick, obtuse margin, outside reddish, stipe stout, about $\frac{1}{2}$ mm. long arising from a reddish carnosose stroma. Asci clavate, $80-100 \times 12-15\mu$. Paraphyses stout, thickened, colored and subundulate

above. Sporidia biseriate, oblong, hyaline, granular and nucleate, $14-16 \times 6-7\mu$.

Differs from *D. olivacea* Ell., in its carnose stroma and smaller asci and sporidia.

Belonidium minimum E. & E.

On dead stems of *Aralia racemosa*, Granogue, Del. Aug. 1893. (Commons No. 2226).

Scattered, erumpent, sessile, pale rose color, minute ($90-110\mu$), sub-discoid, indistinctly margined, subgelatinous, furfuraceo-pilose, or nearly glabrous. Asci clavate-cylindrical, aparaphysate, subsessile, $45-55 \times 6-7\mu$, 8-spored. Sporidia biseriate, fusoid, slightly curved, hyaline, 3-septate, not constricted, subacute, $14-20 \times 3-3\frac{1}{2}\mu$.

Outwardly hardly distinguishable from *Peziza exigua* Ck., but asci twice as large and aparaphysate and sporidia nearly three times as large and 3-septate.

Cenangium tuberculiforme E. & E.

On dead twigs of *Ilex glabra*, Newfield, N. J. Nov. 1893.

Ascomata coriaceous, thin, densely cespitose on an erumpent, yellowish stroma, forming tubercular masses $\frac{1}{4}$ -1 cm. diam., light yellow and furfuraceo-squamulose outside, with the margin entire, white and slightly incurved, urceolate, 2-3 mm. diam., hymenium pale brick-red contracted below into a short, thick, stipe-like base. Asci clavate-cylindrical, $40-50 \times 4-5\mu$, 8-spored. Paraphyses filiform, simple or dichotomously branched above not distinctly thickened at the apex. Sporidia obliquely uniseriate, elliptical, hyaline, continuous, 2-nucleate, subinequilateral, $5-6 \times 2\frac{1}{2}\mu$.

In drying the margin of the cups becomes incurved, and there is a tendency of the opposite sides to roll together.

Patinella vagans E. & E.

On dead twigs of *Lindera Benzoin*, Guyancourt, Del., and on dead stems of *Eupatorium sessilifolium*, Granogue, Del. Aug. 1893. (Commons Nos. 2257 and 2260).

Scattered, erumpent, sessile, small ($\frac{1}{4}$ - $\frac{1}{2}$ mm.), pale flesh-color, concave, with a darker, slightly raised margin closely embraced by the ruptured epidermis, substance soft, carnose. Asci clavate-cylindrical, short stipitate, $40-45 \times 6-7\mu$, 8-spored. Paraphyses stout, gradually thickened to the tips. Sporidia uniseriate or biseriate

above, short-elliptical, 1-2-nucleate, $5-7 \times 4-6\mu$, hyaline or yellowish-hyaline.

Closely resembles outwardly *Patellaria ferruginea* C. and E., but the sporidia are different. In the spec. on *Eupatorium*, the sporidia correspond to the larger measurements and are mostly 2-nucleate.

Karschia sphaerioides E. & E.

On rotten, decorticated oak limb, Newfield, N. J. March 26, 1893.

Ascomata gregarious, sessile, $150-200\mu$ diam., black, margin incurved and irregularly lacerate-toothed, more strongly incurved when dry so as to hide the dull white disk, often clothed outwardly, especially when young, with a few black spreading, bristle-like hairs, which also overspread the surface of the wood. Asci oblong-clavate, short stipitate, $25-30 \times 8-10\mu$, and, like the stout paraphyses, of a greenish-yellow color. Paraphyses 2-3-septate, slightly enlarged above and often constricted at the upper septum. Sporidia biseriate, ovate-oblong, pale brown, uniseptate and slightly constricted at the septum, $8-10 \times 3-3\frac{1}{2}\mu$.

Differs from the other species in its margin so strongly incurved as, in the dry state, to hide the disk almost entirely and thus give the appearance of a pyrenomycete.

Blitrydium Symphoricarpi E. & E.

On dead twigs of *Symphoricarpus vulgaris*, Rockport, Kansas. Aug., 1893. (Bartholomew).

Scattered, erumpent-superficial, slaty-black, $\frac{1}{2}$ -1 mm. diam., discoid, with a narrow, erect margin, outside and disk rugulose and when young clothed with a few, short, scattering, pale, glandular hairs. Asci, oblong, subsessile, $120-130 \times 30-35\mu$, paraphysate, 8-spored. Sporidia biseriate, broad fusoid-oblong or oblong-elliptical, a little narrower below, multiseptate-muriform, yellow-brown, $35-40 \times 16-24\mu$.

Stictis compressa E. & E.

On dead limbs of *Carpinus* and *Ostrya Virginica*, London, Canada. (Dearness).

Ascomata entirely buried in the wood, laterally compressed, 1-2 mm. long, acute at each end, grayish-black. Ostiolum erumpent through the bark forming a minute, white tubercle with an olive-colored center but, at least when young, without any distinct open-

ing. Asci 300–400 x 8–10 μ , with filiform sporidia, multinucleate, becoming multiseptate, nearly as long as the asci, about 1½ μ thick.

**** SPHÆROPSIDEAE AND MELANCONIEAE.

Phyllosticta kalmicola (Schw).

Depazea kalmicola Schw., Syn. N. Am., No. 1812, (pr. p). On living leaves of *Kalmia latifolia*. Newfield, N. J. April, 1893.

Spots amphigenous, orbicular, 1-2 mm. diam., white, with a dark purple margin shading off into reddish-purple. The white is less conspicuous below. Perithecia epiphyllous, depressed globose, subcuticular, black, 100–200 μ diam., sometimes concentrically arranged on the spots, semi-erumpent, but closely covered by the transparent cuticle which is often stellately cleft, but not reflexed, rather broadly pierced above. Sporules oblong elliptical, hyaline, minute (2–3 x 1 μ).

The *Depazea kalmicola* Schw., embraces both a *Septoria* and a *Phyllosticta*, not outwardly distinguishable; the former issued in de Thümen's Mycotheca, No. 1494, Ell. N. A. F. 344, Roum. F. G. 2327 and Rab. F. E. 2792. Ell. and Everhart, N. A. F., 2d Ser. 2661 is a different thing, the spots having a raised border and the sporules being longer. The label to this last No. is erroneous. It should read on *Kalmia angustifolia*, and the Syn., “*Sphaeria kalmiacola*” should be canceled.

Phyllosticta latifolia E. & E.

On leaves of *Kalmia latifolia*, Newfield, N. J. May, 1893.

Spots amphigenous, orbicular, 3-5 mm. diam., rusty brown with a shaded, dark red border, indistinctly zonate. Perithecia buried, 150–200 μ diam., the apex rupturing the epidermis but hardly erumpent, circinate arranged so as to leave an empty space in the center of the spot. Sporules acutely and narrowly elliptical, hyaline, 6–8 x 2½–3½ μ on basidia about as long as the sporules.

Differs from *Ph. kalmicola* (Schw.) in its brown, subzonate spots, circinate perithecia and larger sporules.

Phyllosticta discincola E. & E.

On leaves of *Forsythia* Cult., Washington, D. C., Com. D. G. Fairchild.

Spots amphigeneous, grayish-brown, 1-3 mm. diam., suborbicular, bounded on both sides by a distinct raised line giving the appearance

of a round disk on the face of the leaf. This line is more pronounced and the spots are rather paler below. Perithecia amphigenous, black, $100-110\mu$ diam. pierced above, only the apex erumpent. Sporules elliptical, olivaceous, $4-5 \times 2\frac{1}{2}-3\mu$.

Distinguished from *Ph. Forsythiae* Sacc. by its discoid, smaller spots. It also grows on a different species of *Forsythia*.

On the same leaves there is an *Ascochyta* with sporules $7-10 \times 2\frac{1}{2}\mu$ and also *Discosia maculicola* Ger.

Phyllosticta confertissima E. & E.

On leaves of *Ulmus fulva*, Louisville, Kansas. Oct. 1893. (Bartholomew No. 1186).

Spots amphigenous, orbicular, 4-6 mm. diam., definite, of a uniform dark brick-red color. Perithecia hypophyllous, numerous, minute, 75μ diam., perforated above, scarcely visible without a lens. Sporules allantoid, hyaline, $3-4 \times 1\mu$.

Has the same habit as *Phyllosticta (Phoma) Virginiana* Ell. and Halst.

Phyllosticta moricola E. & E.

On leaves of young seedlings of *Morus rubra*, Belvue, Kansas. Oct., 1883. (Bartholomew No. 1184).

Spots amphigenous, large, red-brown at first, then whitening out with a brick-red, shaded margin, irregular in shape 1-2 cm. diam. Perithecia amphigenous, subdiscoid, brown, perforated above, $100-110\mu$ diam. Sporules oblong or clavate-oblong or subelliptical, hyaline, 2-nucleate, $5-8 \times 2\frac{1}{2}-3\mu$.

Ph. morifolia Pass. is on discoid spots and has sporules only $3\frac{1}{2} \times 1\frac{1}{2}\mu$.

Phyllosticta orbicula E. & E.

On leaves of *Nasturtium Armoracia*, London, Canada. July, 1893. (Dearness No. 2132).

Spots amphigenous, orbicular, thin, white, $1-1\frac{1}{2}\mu$ diam. with a narrow, light colored margin on both sides of the leaf. Perithecia mostly epiphyllous, discoid, black, $80-120\mu$ diam., erumpent-superficial. Sporules oblong-elliptical or ovate, hyaline or subolivaceous, $4-6 \times 2\frac{1}{2}-3\mu$.

Differs from *Ph. anceps* Sacc. in its broader, differently shaped, subolivaceous sporules.

Phyllosticta Iridis E. & M.

On leaves of *Iris versicolor*, Green Cove Springs, Fla. April 12, 1884, (Dr. Martin), and Ann Arbor, Mich. July 12, 1892. (Harriet L. Merrow).

Perithecia amphigenous, minute, buried in the leaf, with only the papilliform apex visible, 4-6 together on small ($\frac{1}{2}$ -1 mm.), dark purple spots thickly scattered over the leaf which at length becomes reddish-brown and dead at the apex and along the sides. Sporules oblong-cylindrical, hyaline, nucleolate, $9-11 \times 2\frac{1}{2}\mu$, abundant. The spots soon become dirty white in the center.

The Florida specc. lack the white center in the spots, and are not as well developed as the Mich. specc. but are evidently the same. Judging from the description and the spec. in F. Gall. 238, this is very distinct from *Asteroma tenerrimum* Grogn.

Dothiorella Hippocastani E. & E., N. A. F. 2941, F. Columbiani 72.

On dead limbs of *Æsculus Hippocastanum*, Newfield, N. J. May 1893.

Stroma subcuticular, seated on the surface of the inner bark, elliptical, grayish, about 2 mm. diam., often seriate-confluent, the apex erumpent through the slightly raised, irregularly ruptured epidermis. Perithecia 8-12 in a stroma, ovate-globose, whitish inside, $100-150\mu$ diam., contracted above into short necks with their papilliform ostiola barely erumpent in the dark colored disk. Sporules oblong-fusoid, hyaline, continuous, at first granular with several oil globules, $20-25 \times 5-6\mu$, on pedicels shorter than the sporules.

Dothiorella Mali E. & E.

On dead apple tree limbs, Cuba, Ills. May 11, 1893. (Bartholomew No. 991).

Stromata scattered, orbicular or elliptical, 1-2 mm. diam., at first covered by the epidermis, finally erumpent and loosely embraced by its ruptured margin. Perithecia globose, white inside, $\frac{1}{4}-\frac{1}{3}$ mm. diam., buried in the substance of the soft, dark colored stroma, with only their minute papilliform ostiola visible. Sporules oblong, hyaline, granular, $18-20 \times 4-5\mu$, on stout basidia about as long as the sporules.

Vermicularia petalicola E. & E.

On decaying petals of *Liriodendron Tulipifera*, Wilmington, Del. June, 1893. (A. Commons).

Perithecia erumpent-superficial, black, subglobose, $\frac{1}{3}$ mm. diam. Sporules fusoid, curved, hyaline nucleate, $20 \times 2-2\frac{1}{2}\mu$. Perithecia rather sparingly clothed with stout, spreading, rather short, black bristles.

Sphæropsis Mori E. & E.

On twigs of *Morus*, London, Canada. July, 1893. (J. Dearness).

Perithecia evenly scattered globose, $200-250\mu$ diam., buried in the bark which is uniformly blackened within, raising the epidermis into pustules which are ruptured at the apex. Sporules oblong, pale brown, $18-22 \times 7-8\mu$.

Differs from *S. valsoidea* C. & E., in its smaller, evenly scattered perithecia and sporules nearly twice as long.

Hendersonia pustulata E. & E.

On old hickory nuts lying on the ground, Newfield, N. J. May, 1893.

Perithecia scattered, pustuliform, $\frac{1}{2}-1$ mm. diam., flattened, seated on the inner surface of the nut. Sporules narrow-elliptical, 3-septate, $10-12 \times 3-3\frac{1}{2}\mu$, not constricted, pale brown, inner cells darker. Basidia about as long as the sporules.

Zythia boleticola E. & E.

On *Parillus (Boletinus) porosus* Berk. Newark, Del. July, 1893. (A. Commons).

Perithecia scattered, pustuliform, small (200μ diam.), thin-membranaceous, yellowish-flesh-color becoming amber color. Sporules hyaline, oblong or elliptic-oblong $5-15 \times 4-5\mu$.

Stagonospora pedunculi E. & E.

On old peduncles of *Liriodendron Tulipifera*, Nuttallburg, West Va. July, 1893. (L. W. Nuttall, No. 119).

Perithecia gregarious, pustuliform, about $\frac{1}{3}$ mm. diam., covered by the blackened epidermis. Sporules cylindrical, $18-22 \times 2-2\frac{1}{2}\mu$, multinucleate, hyaline, straight.

Septoria Lespedezæ E. & E.

On leaves of *Lespedeza*, London, Canada, July, 1893. (Dearness No. 2134).

Hypophyllous, on small (1-2 mm.), subangular or suborbicular, rather indistinctly limited, grayish-brown spots. Perithecia, buried,

with only the apex erumpent, subglobose, about 75μ diam., dark colored. Sporules acicular, $12-20 \times 1-1\frac{1}{4}\mu$, faintly nucleolate.

Septoria gigaspora E. & E.

On leaves of *Celtis occidentalis*, Rockport, Kansas. Sept. 2, 1893. (Bartholomew, No. 1175).

Spots amphigenous, orbicular, dirty brown, zonate, center white, margin definite but irregular, grayish-brown below, $\frac{1}{2}$ -1 cm. across. Perithecia buried in the substance of the leaf, globose, $150-200\mu$ diam., covered by the blackened epidermis which is pierced by the subconical, perforated ostium. Sporules vermiform-cylindrical, nearly straight, somewhat narrowed below, hyaline, granular, becoming multiseptate, $75-100 \times 6-8\mu$.

Not to be confounded with *Hendersonia celtifolia* Cke., on the same host.

Septoria Medicaginis Rob. & Desm.

The spec. of this species in Desm. Plantes Crypt. de France, No. 1728, have the sporules mostly 3-septate, and being without any true perithecium are referable to the genus *Septogloeum*. Specimens sent from Canada, by Mr. Dearness, on *Medicago lupulina*, agree with Desm. spec. only the sporules are shorter ($14-16 \times 3\mu$), instead of $15-20 \times 3\mu$ which is about the size of those in Desm. Exsicc. The Canada spec. also have the sporules only nucleate and not distinctly septate, but as nucleate spores often become septate, and as the Canada spec. agree in other respects with those issued by Desm. as *Septoria Medicaginis*, we have no hesitation in calling both the same thing—*Septogloeum Medicaginis* (Rob. & Desm.) *Gloeosporium Medicaginis* E. & K., Journ. Mycol., III p. 104, is probably the same thing, the spec. now having the spores uniseptate.

Myxosporium luteum E. & E. N. A. F. 2953. Fungi Columbiani, 150.

On bark of *Carya tomentosa*, Nuttallburg, West Va. June, 1893. (L. W. Nuttall, No. 79).

Stroma globose-conical, light yellow, $\frac{3}{4}$ -1 mm. diam., slightly sunk in the inner bark, unilocular and opening by a single pore. The surface of the inner bark around this pore is of a pale slate color, the colored portion definitely limited by a black line so as to form an irregular circle about 2 mm. across, but this line does not penetrate the bark. Sporules navicular-oblong, hyaline, obtuse, $10-11 \times$

4–5 μ with 1-2 large nuclei. Basidia slender-cylindrical 15–20 x 1 $\frac{1}{2}$ μ . Mass of exuded sporules flesh-color.

Gloeosporium apocryptum E. & E., Journal Mycol. IV, p 52 *var. ramicolum* E. & E. (*Gloeosporium Negundinis* E. & E., in Herb.).

On small dead limbs of *Negundo aceroides*, near Wilmington, Del. June, 1893. (A. Commons, No. 2084).

Acervuli covered by the blackened epidermis, variable in size $\frac{1}{8}$ – $\frac{1}{4}$ mm. diam., round or irregular in shape, pustuliform. Conidia oblong, rounded at the ends, sometimes slightly narrowed in the middle, 12–15 x 4–6 μ .

Harknessia thujina E. & E.

On inner surface of white cedar bark (*Cupressus thyoides*) peeled off and left lying on the ground, Newfield, N. J. Nov. 1893.

Acervuli buried in the bark, short-elliptical, black, about $\frac{1}{2}$ mm. in the longer diameter, opening by a small pore and finally discharging the opaque, acutely elliptical, 12–16 x 9–11 μ spores with persistent, hyaline pedicels 16–20 μ long. There is no appendage at the apex of the spore which is merely obtusely pointed. The surface of the bark is only raised into slight pustules which at first are scarcely noticeable.

Gloeosporium boreale E. & E.

On *Salix* sp. Newfane, Vt. Sept., 1893. (A. J. Grout, No. 43).

Spots orbicular, large 4-5 mm. diam., brown, soon confluent and occupying the greater part of the leaf which turns light yellow around them. Acervuli numerous, small, hypophyllous. Conidia abundant, clavate-cylindrical, hyaline, continuous, 7–12 x 1 $\frac{1}{2}$ –2 μ issuing in short light-colored cirrhi which soon become amber colored.

Resembles *G. Salicis* West., but that species is epiphyllous and the conidia (sec. Cavara) are 14–16 x 8 μ .

Gloeosporium Osmundæ E. & E.

On pinnules of *Osmunda cinnamomea*, Munith, Jackson Co., Mich. Aug. 1893. (G. H. Hicks, No. 1795).

Acervuli innate, numerous, minute, on yellow-margined, brown spots, discharging the subglobose, 3 μ conidia, in short, white cirrhi, on both sides of the pinnule.

Cylindrosporium Glyceriae E. & E.

On leaves of *Glyceria nervata*, Racine, Wisconsin. Aug., 1893. (Dr. J. J. Davis, No. 9327).

Spots narrow-elliptical, dirty white, with a purple border, 4-6 mm. long by $1\frac{1}{2}$ -2 mm. wide, or often confluent for one or more centimeters. Acervuli 1-4 in the center of the spots, amphigenous, but more distinct above, 100-150 μ diam. Conidia cylindrical, $15\text{--}30 \times 2\frac{1}{2}\text{--}3\mu$, nucleate and apparently becoming 3-septate, hyaline, straight or slightly curved.

This is a very different thing from *Septoria Tritici* Desm., as shown by the diagnosis and spec. of that species, and can not be a *Septoria* as there is no perithecium.

Cylindrosporium Calamagrostidis E. & E.

On living leaves of *Calamagrostis Canadensis*, Berryville, Wis. June, 1893. (Dr. J. J. Davis, No. 9316).

Spots linear, $\frac{3}{8}$ -1 cm. long by $1\text{--}1\frac{1}{2}$ mm. wide, white, with a purplish border. Acervuli epiphyllous, seriate, 150-200 μ diam. Conidia filiform, curved, $40\text{--}60 \times 1\frac{1}{2}\text{--}2\mu$. multinucleate, (becoming multiseptate)?, narrowed to a flagelliform tip at one end, the other end more abruptly narrowed. The conidia ooze out in small, amber colored masses.

This is very different from *Gloeosporium graminicolum* E. & E. in Journ. Mycol. V. p. 154.

Cylindrosporium Toxicodendri (Curtis) (in Herb. Curtis).

Septoria Toxicodendri Curtis, in Peck's 29th Rep.

Gloeosporium Toxicodendri E. & M., Journ. Mycol. I, p. 116.

On leaves of *Rhus Toxicodendron*, not uncommon, Eastern and Middle States, Canada and Iowa.

Spots reddish-brown above, whitish below, subangular, $1\frac{1}{2}$ -3 mm. diam., margin darker. Acervuli mostly hypophyllous, 250-400 μ diam., covered by the blackened epidermis which is raised into prominent pustules resembling perithecia. Conidia cylindrical, greenish hyaline, nucleate and faintly 1-3-septate, $30\text{--}60 \times 2\frac{1}{2}\text{--}3\mu$.

A re-examination of the spec. of *Gloeosporium Toxicodendri* E. & M., Journ. Mycol. I, p. 116, shows that the spores were erroneously described and that they are in reality as above stated. Prof. A. J. McClatchie sends this from Pasadena, Cala., on leaves of *Rhus diversiloba*, agreeing with the spec. on *Rhus Toxicodendron*, only the acervuli are mostly epiphyllous. In all the spec. the acervuli finally collapse.

Septogloeum Lupini E. & E.

On living leaves of *Lupinus perennis*, Munith, Mich. Aug. 1893. (G. H. Hicks).

Occupying the tips of the leaves which become dead and reddish-brown. Acervuli minute, 60-70 μ diam. Conidia, oblong-cylindrical, 2-4-nucleate, more or less bent or nearly straight, obtuse, 1-3-septate, 12-22 x 4-5 μ . Quite distinct from *Cylindrosporium longisporum* Ell. & Dearness.

Pestalozzia nucicola E. & E.

On the inner surface of old broken hickory nuts lying on the ground, Newfield, N. J. May, 1893.

Acervuli subconical, erumpent, small, 150-200 μ diam. Sporules oblong-fusoid, 4-septate, scarcely constricted, terminal cells hyaline, inner cells smoky-brown, length of the colored part about 12 μ by 4 μ wide, apical cell short-conical, crowned with a 3-parted crest of three spreading, hyaline bristles 7-10 μ long, lower cell attenuated into a pedicle shorter than the sporule.

Pestalozzia lycopodina E. & E.

On *Lycopodium complanatum*, Naaman's Creek, Del. July, 1893, (A. Commons).

Acervuli erumpent-superficial, conic-hemispherical, $\frac{1}{4}$ - $\frac{1}{2}$ mm. diam. Conidia clavate, 4-septate, 20x5 μ terminal cells hyaline, conical, inner cells light brown, crest of 3-4 hyaline bristles 10-12 μ long, curving outward. Pedicels about as long as the conidia.

***** **HYPHOMYCETES.****Monilia urediniformis** E. & E.

On half grown apples, Newfield, N. J. June 28, 1893. (Mrs. A. J. Ellis).

Erumpent in dense orange-colored tufts, at first covered by the thin epidermis and forming yellow blisters on dead shriveled places on the apples. These consist of densely fasciculate hyphae with erect branches, septate above and soon separating into conidia, varying in size from 15-80 x 12-30 μ , not connected by any distinct isthmus and filled with subglobose, hyaline sporules 3-10 μ diam., and these again filled with smaller sporules. The tufts of hyphae soon rupture the epidermis and the large conidia bursts and liberate the enclosed

sporules, thus forming an orange-colored dusty mass, reminding one of *Peridermium*.

Differs from *M. sitophila* Mont. and *M. Martini* E. & S., in the character of the conidia.

Ramularia reticulata E. & E.

On leaves of *Osmorrhiza* Waterford, Wis. June, 1891. (Dr. J. J. Davis, No. 911).

Conidia oblong or cylindrical, hyaline, mostly continuous, $12-25 \times 1\frac{1}{2}-2\mu$, on very short hyphae, forming minute, but dense white tufts seriatly arranged along the nervelets of the leaf, on black, dead (often marginal) spots of irregular shape and 1-3 mm. in diameter.

Piricularia parasitica E. & E.

Parasitic on *Phyllachora graminis* (Pers.), on *Elymus Virginicus*, Kenosha Co., Wis. Aug. 1893. (Dr. J. J. Davis, No. 9311).

Densely tufted, grayish-white. Hyphae erect, simple or forked above, sparingly septate, hyaline, $70-110 \times 3-4\mu$. Conidia terminal, narrow ovate or obclavate, hyaline, becoming 2-3-septate, $15-22 \times 5-7\mu$.

The fungus forms a fringe around the margin of the *Phyllachora* stroma. The hyphae and conidia much resemble those of *P. Oryzae* Cava.

Menispora acicola E. & E., N. A. F., 2965.

On fallen leaves of *Pinus rigida*, Newfield, N. J. June, 1893.

Evenly effused so as to form a thin pubescence, gray at first, but soon becoming darker. Hyphae erect, simple, brown, sparingly and distantly septate, slender, $100-110 \times 3\mu$. Conidia cylindric-fusoid continuous, slightly curved hyaline, about $12 \times 1\frac{1}{2}-2\mu$, with a slender bristle at each end about 8μ long.

The conidia are smaller than in *M. ciliata* Cda.

Dicoccum populinum E. & E.

On leaves of *Populus grandidentata*, Iowa City, Iowa, June, 1889.

Hypophyllous, on suborbicular, light brown spots, 3-4 mm. diam., with a narrow dark margin.

Conidia ovate-oblong, 1-septate, olivaceous, $14-18 \times 6-7\mu$, rounded or subtruncate above, narrowed and subacute below, sessile, without any visible hyphae, forming an olivaceous layer on the spots.

Dicoccum nebulosum E. & E.

On *Fraxinus Americana*, Sept., '93, Wisconsin. (Dr. J. J. Davis).

Hypophyllous, spots none. Conidia obovate-oblong, olivaceous, 1-septate, $11-13 \times 4\mu$, apiculate below, rounded above sessile, like the preceding species scarcely constricted, and with the septum above the middle, but differing in the absence of any spots and smaller conidia, which form faint olivaceous, more or less confluent patches, without any distinct hyphae.

Cladosporium nigrellum E. & E.

On bark of R. R. ties, Nuttallburg, West Va. Oct., 1893. (L. W. Nuttall, No. 172).

Hyphae densely tufted, septate, subequal, $150-200 \times 5-6\mu$, tufts effused, subconfluent, forming a black, velvety coat extending over the surface of the bark indefinitely, with the same habitus *Macrosporium nigrellum* C. & E. Conidia smoky hyaline, becoming pale brown, variable in size, the smaller ones ovate, continuous or uniseptate, $6-8 \times 5\mu$, the larger ones oblong-elliptical or subcylindrical, 2-3-septate, $12-15 \times 5-6\mu$.

Clasterisporium olivaceum E. & E.

On old corn stalks (*Zea Mays*), Newfield, N. J. May 14, 1893.

Forms a thin, dark olive layer (becoming nearly black), composed of much branched, creeping hyphae, hyaline at first, becoming brownish and closely appressed to the matrix. Conidia cylindrical, 4-8-septate, constricted at the septa, obtuse, $20-25 \times 6\mu$, arising directly from the creeping hyphae without any visible pedicel.

Ceroospora exotica E. & E.

On leaves of some cultivated water lily in an aquarium on the World's Fair Grounds, Chicago, Ill. Oct., 1893. (E. F. Smith).

Spots epiphyllous, orbicular, small (2-4 mm.), dirty-brown, with or without a slightly raised border. Hyphae densely fasciculate, subolivaceous, simple or with a short, rudimentary branch above, $25-40 \times 2\frac{1}{2}-3\mu$. Conidia slender, linear, multiseptate, hyaline, $80-150$ (exceptionally 190) $\times 3-3\frac{1}{2}\mu$, nearly straight.

Closely allied to *C. nymphaeacea* C. & E., but hyphae and conidia twice as long as in that species. The tufts become effused and appear like a lead-colored, thin tomentum, covering the central part of the spots.

Cercospora atrogrisea E. & E.

On dead stems and pods of *Raphanus sativus*, Newfield, N. J. Oct., 1893.

Hyphae cespitose on a small tubercular base, pale brown 1–2-septate, torulose and subundulate above, $60\text{--}70 \times 4\mu$, forming slaty black, elliptical patches 2–4 mm. long, covered with the minute scattered tufts. Conidia slender-obclavate, hyaline, $80\text{--}110 \times 3\frac{1}{2}\text{--}4\mu$, 6–12-septate (mostly about 6-septate). The mature conidia are so abundant as to whiten the patches of hyphae. Besides the absence of any spots, and its growth on pods and stems, this differs from *C. Nasturtii* Pass. in its multiseptate conidia, which are not bacillary as in *C. Armoraciae* Fekl., and are narrower and with fewer septa than those of *C. Cruciferarum* E. & E. The hyphae are also shorter than in the last named species. The specc. are overrun with *Macrosporium fasciculatum* C. & E.

Macrosporium Nelumbii E. & E.

On leaves of *Nelumbium luteum*, Belvue, Kansas. Oct. '93. (Bartholomew, No. 1180).

Spots dirty brown, suborbicular and subindefinite, 1–6 mm. diam., thickly scattered over the leaf and more or less confluent. Hyphae epiphyllous, scattered and solitary or 2–3 connected at base, brown, 3–4-septate, $60\text{--}80 \times 5\text{--}6\mu$, the upper cell mostly swollen. Conidia clavate, 3–5-septate, with a few faint, partial longitudinal septa, pale brown $35\text{--}50 \times 10\text{--}15\mu$, attenuated below into a slender stipe $12\text{--}15\mu$ long.

Macrosporium esculentum E. & E.

On dried up fruit of egg plant (*Solanum esculentum*), Newfield, N. J. March, 1893.

Forms a dense, olive-brown coating, on the dried up fruit. Hyphae subfasciculate, erect, $15\text{--}25 \times 4\mu$, rather closely septate, yellowish-brown. Conidia terminal, variable in shape and size, from subglobose $8\text{--}15\mu$ to oblong-elliptical, $12\text{--}22 \times 10\text{--}15\mu$, or obovate $10\text{--}15 \times 7\text{--}12\mu$, pale yellow-brown, 3-septate becoming more or less distinctly muriform, the globose conidia often sarcinulate-septate, *i. e.*, with septa crossing each other at right angles, running entirely across.

This differs from *M. tomato* Cke. in its shorter hyphae and differently shaped, paler conidia.

Isaria Virginiensis E. & E.

On the young stroma of *Hypoxyton rubiginosum* (Pers)? Nuttallburg, West Va. July 1893. (L. W. Nuttall, Nos. 95 and 102).

Stromata gregarious, simple, slender clavate, $1\frac{1}{2}$ –2 mm. high, yellowish-white, obtuse and subcapitate at the apex, curved, often decumbent, clothed nearly to the base with spreading, hyaline, dendroid, $1\frac{1}{2}$ –2 branching hyphae (sporophores) 40 – $45 \times 2\frac{1}{2}\mu$, their tips often toothed and bearing 1-4, elliptical or ovate, hyaline $3\frac{1}{2} \times 2\frac{1}{2}\mu$, conidia.

Analogous to *Isaria umbrina* Per. (*Institale acariforme* Fr), but differs in several respects.

Illosporium minimum E. & E.

On rotten wood. Prof. Geo. F. Atkinson (No. 308).

Sporodochia minute, 75 – 85μ diam., contracted below into a very short stipe or sessile, white at first, becoming yellowish. Hyphae articulate, di-trichotomously branched, the articulations biconical, 5 – 6μ diam.

Resembles *I. pallidum* Cke., but that has sporodochia 200 – 250μ diam., with the subglobose terminal articulations of the hyphae 8 – 10μ diam.

Cylindrocolla acuum E. & E.

On fallen leaves of *Pinus rigida*, Newfield, N. J. June, 1893.

Sporodochia superficial, suborbicular, flattened, pale-flesh color, sometimes sublobate $\frac{1}{4}$ –1 mm. diam., margin and lower side paler. Sporophores branched, soon separating into cylindrical hyaline, 3-4 nucleate, concatenate, subtruncate conidia 12 – 15×2 – $2\frac{1}{2}\mu$.

Strumella steganosporioides E. & E.

On dead limbs of *Carpinus Americana*, London, Canada. June 15, 1893 (Dearness, No. 2117).

Sporodochia tubercular, of cellular structure, dirty white inside, $\frac{3}{4}$ –1 mm. diam., sometimes 2-5 connate in a single tubercle. Conidia obovate, globose or subelliptical, 23 – 35μ in the longer diameter, olive-brown, reticulate, hollow and fragile, like the conidia of *Steganosporium*, forming a nearly black layer, attached to the superficial cells of the sporodochium by a very short, thick pedicel.

Fusarium Pteridis E. & E. N. A. F. 2982. F. Columbiani 98.

Parasitic on *Phyllachora flabella* (Schw.), on old fronds of *Pteris. aquilina*, Newfield, N. J. June, 1893.

Erumpent, forming white specks on the *Phyllachora*. Creeping hyphae septate, branched; erect hyphae branched, bearing the fusoid, hyaline, straight, 1–3-septate, $25-40 \times 3\frac{1}{2}\mu$ conidia.

Fusarium granulosum E. & E.

On dead stems of *Smilax hispida*, Mt. Cuba, Del. June, 1893. (Commons, No. 2091).

Sporodochia thickly scattered, erumpent, granuliform, light flesh-color, minute. Hyphae stout, irregularly branched, hyaline, fusoid, moderately curved, 3-septate, $30-55 \times 3-3\frac{1}{2}\mu$.

Resembles small granules of white sugar, scattered over the stems.